

DIRECT WRITE APPROACH

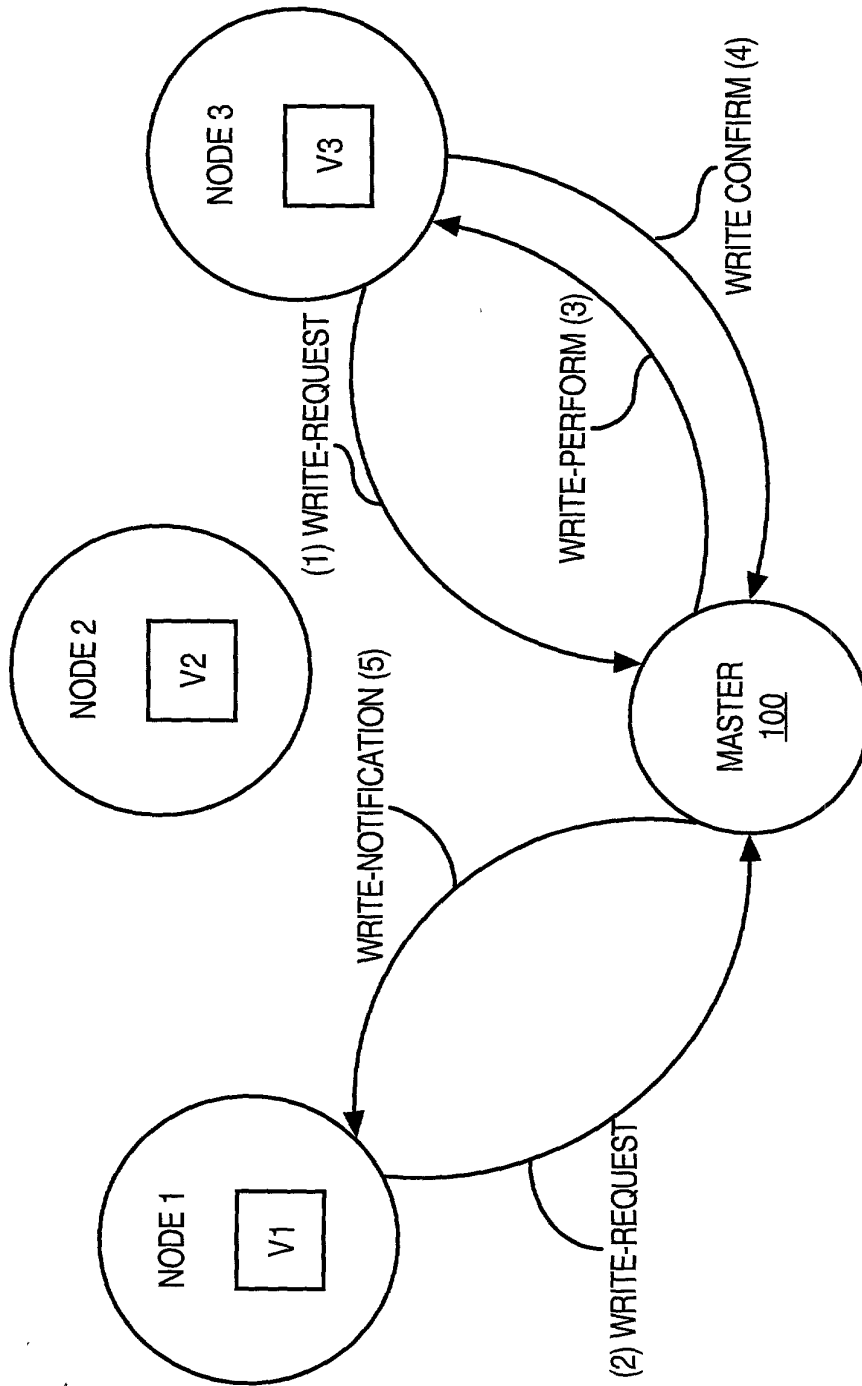


FIG. 1

INDIRECT WRITE APPROACH

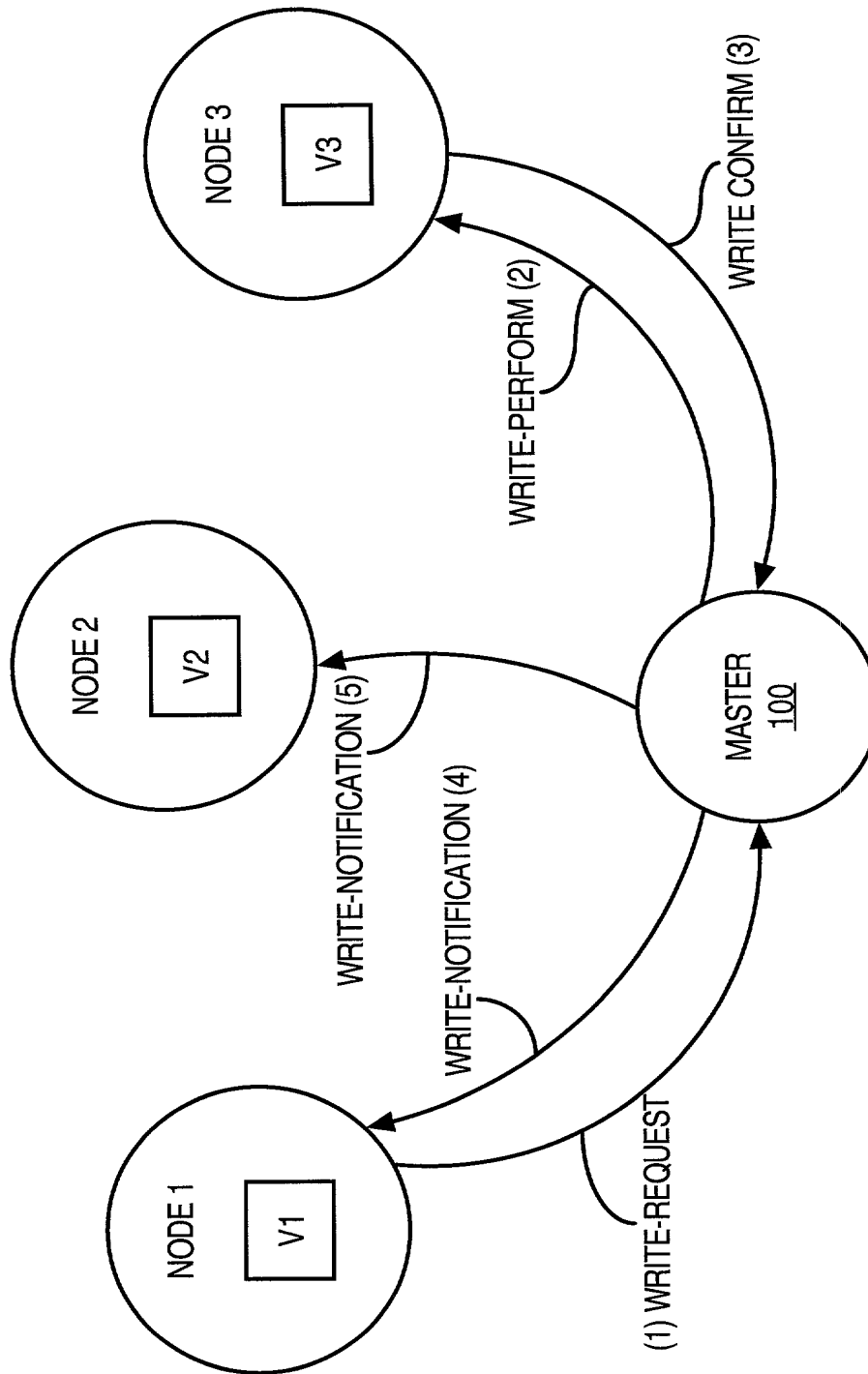


FIG. 2

OWNER-BASED WRITES WHEN GLOBAL DIRTY IS FALSE

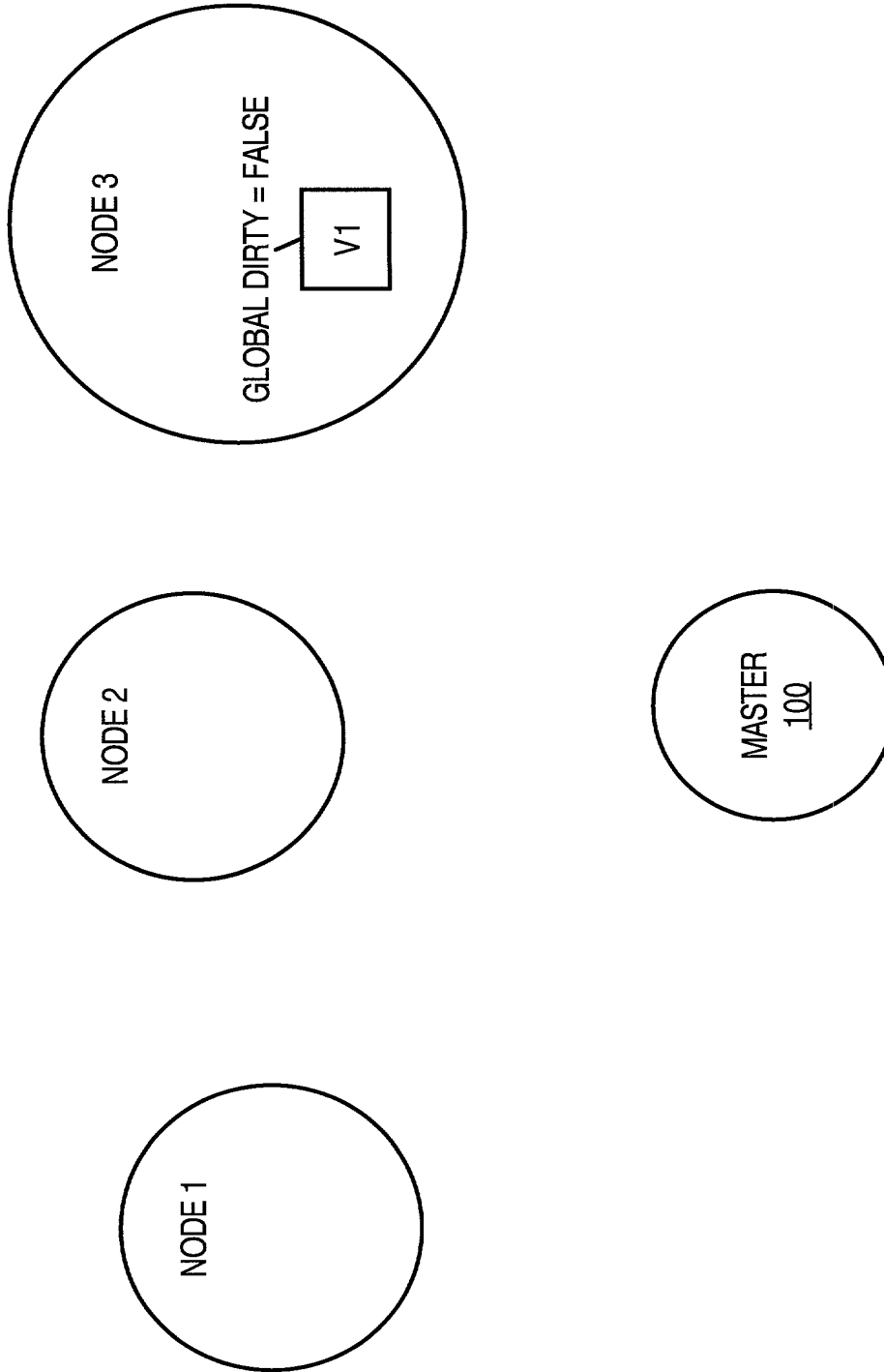


FIG. 3a

OWNER-BASED WRITES WHEN GLOBAL DIRTY IS TRUE

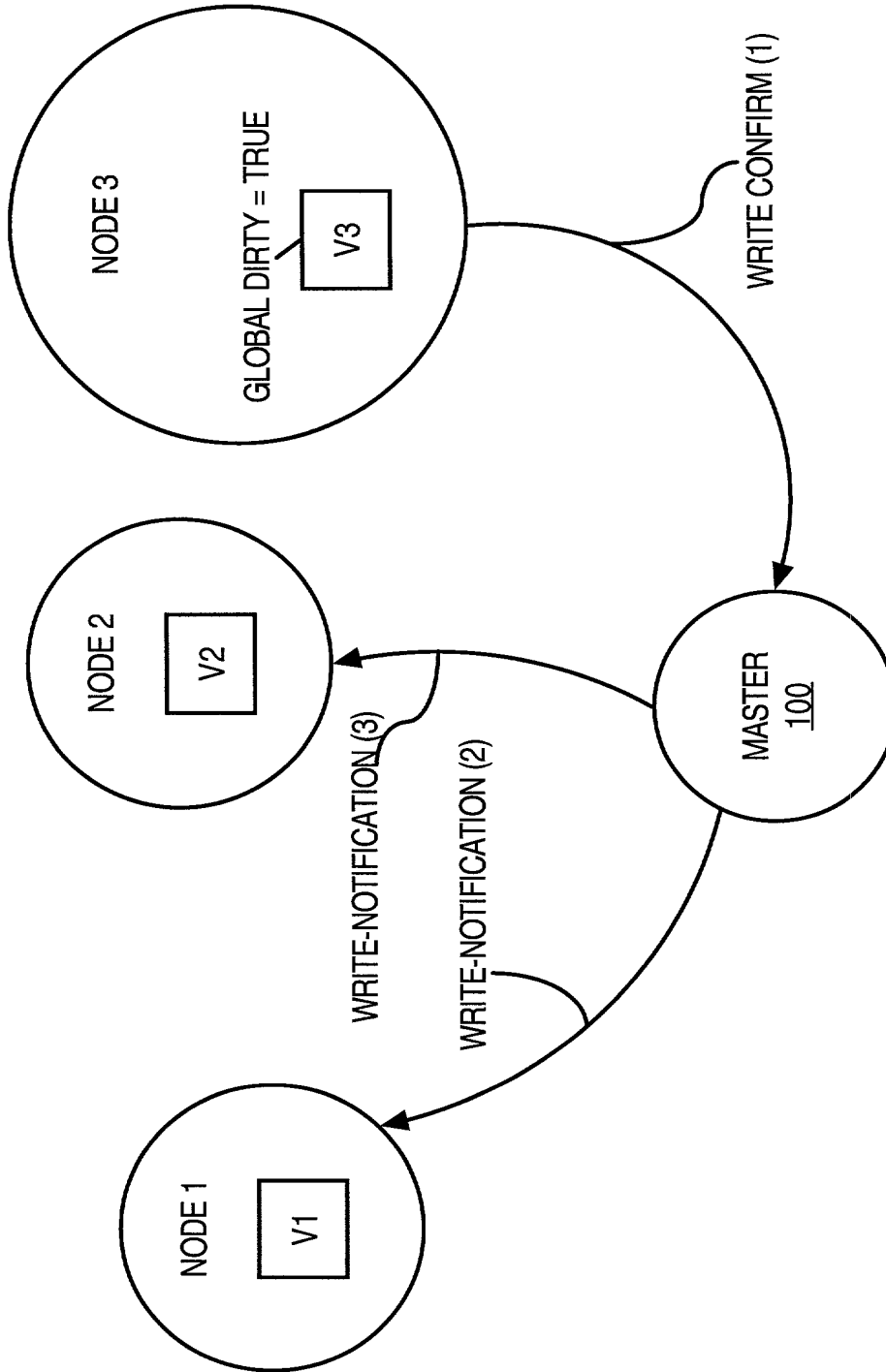


FIG. 3b

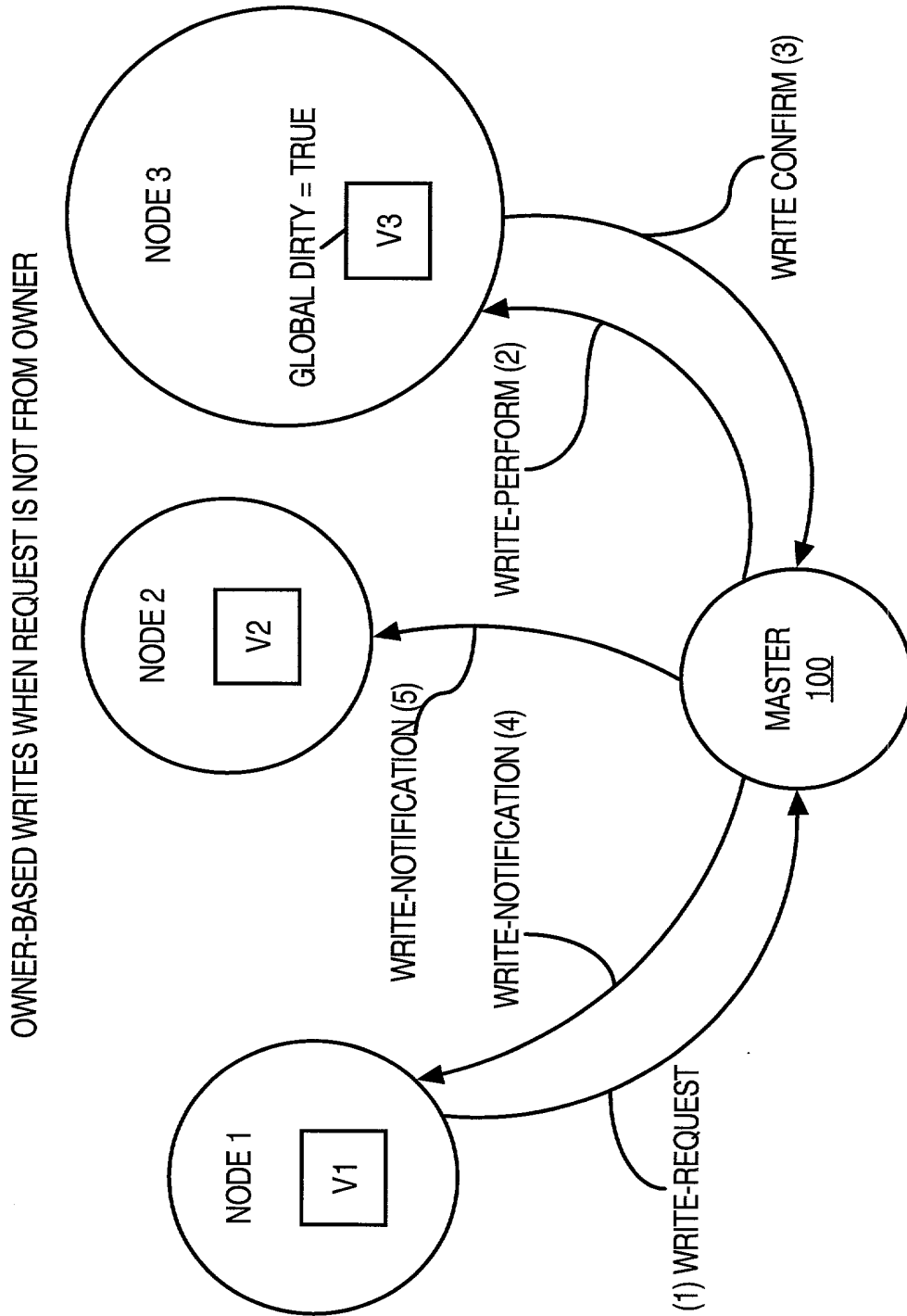


FIG. 3c

ROLE-BASED APPROACH WHEN MODE IS LOCAL

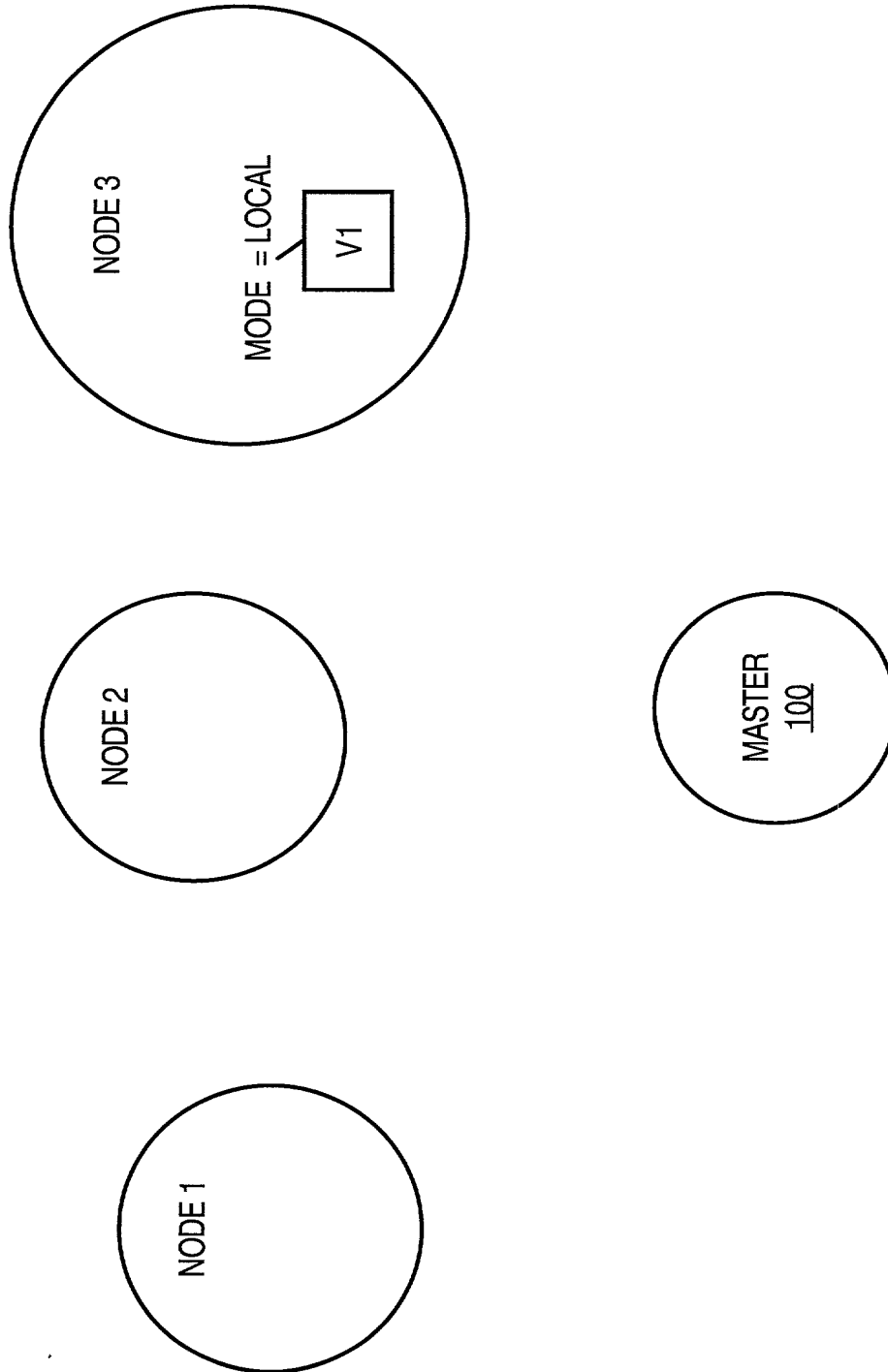


FIG. 4a

ROLE-BASED APPROACH WHEN MODE IS GLOBAL

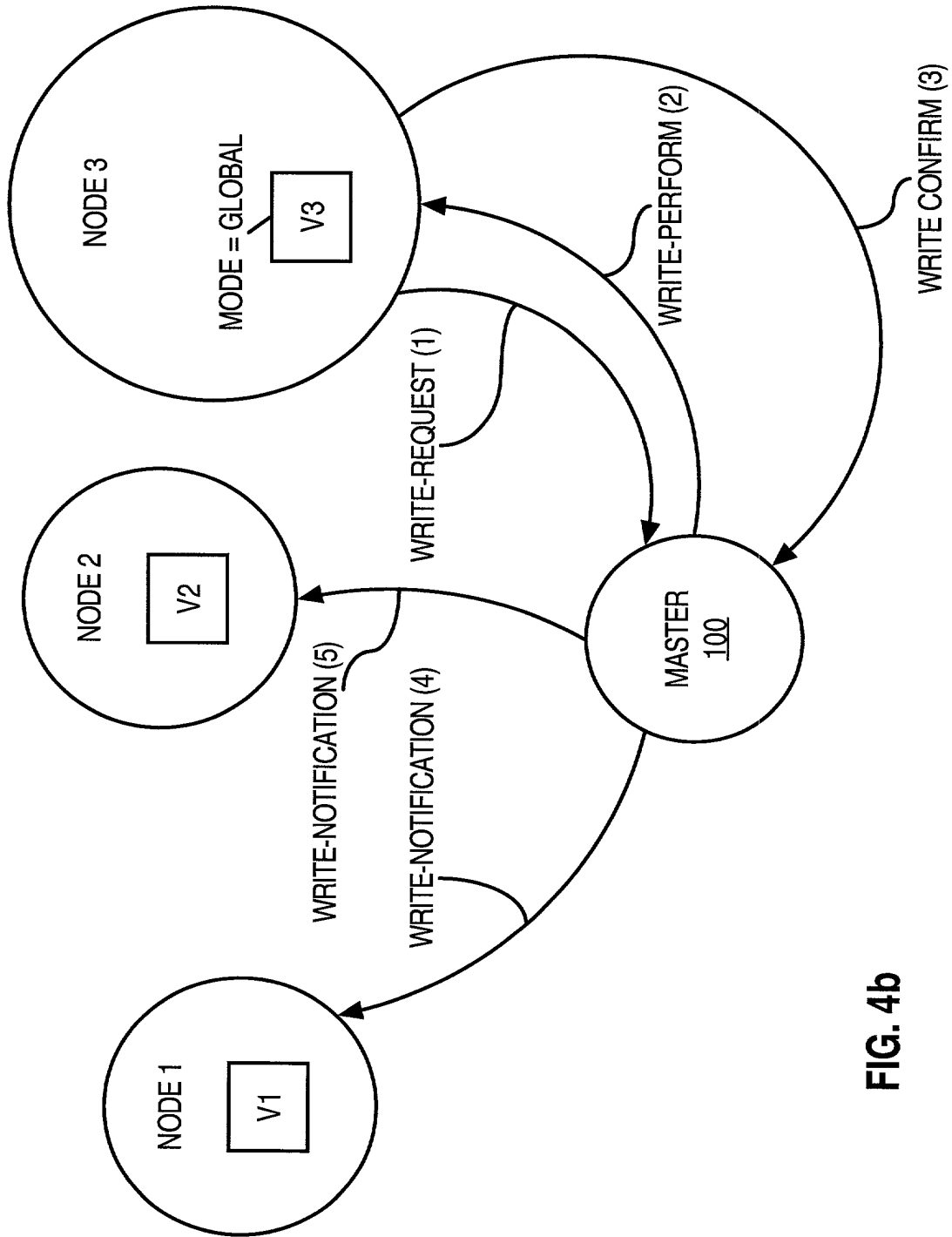


FIG. 4b

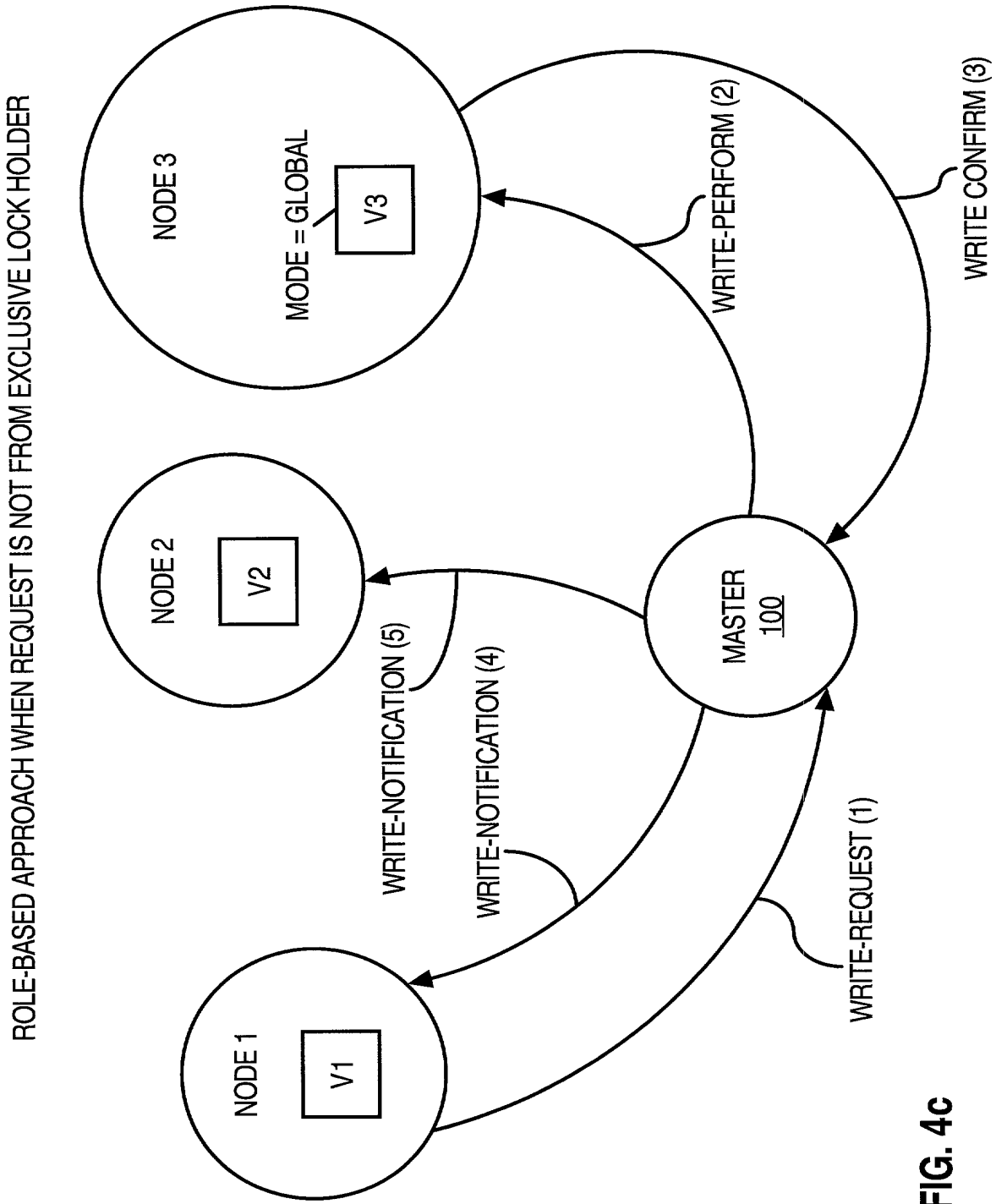


FIG. 4c

ROLE-BASED APPROACH WITH TRANSFER DURING WRITE OPERATION

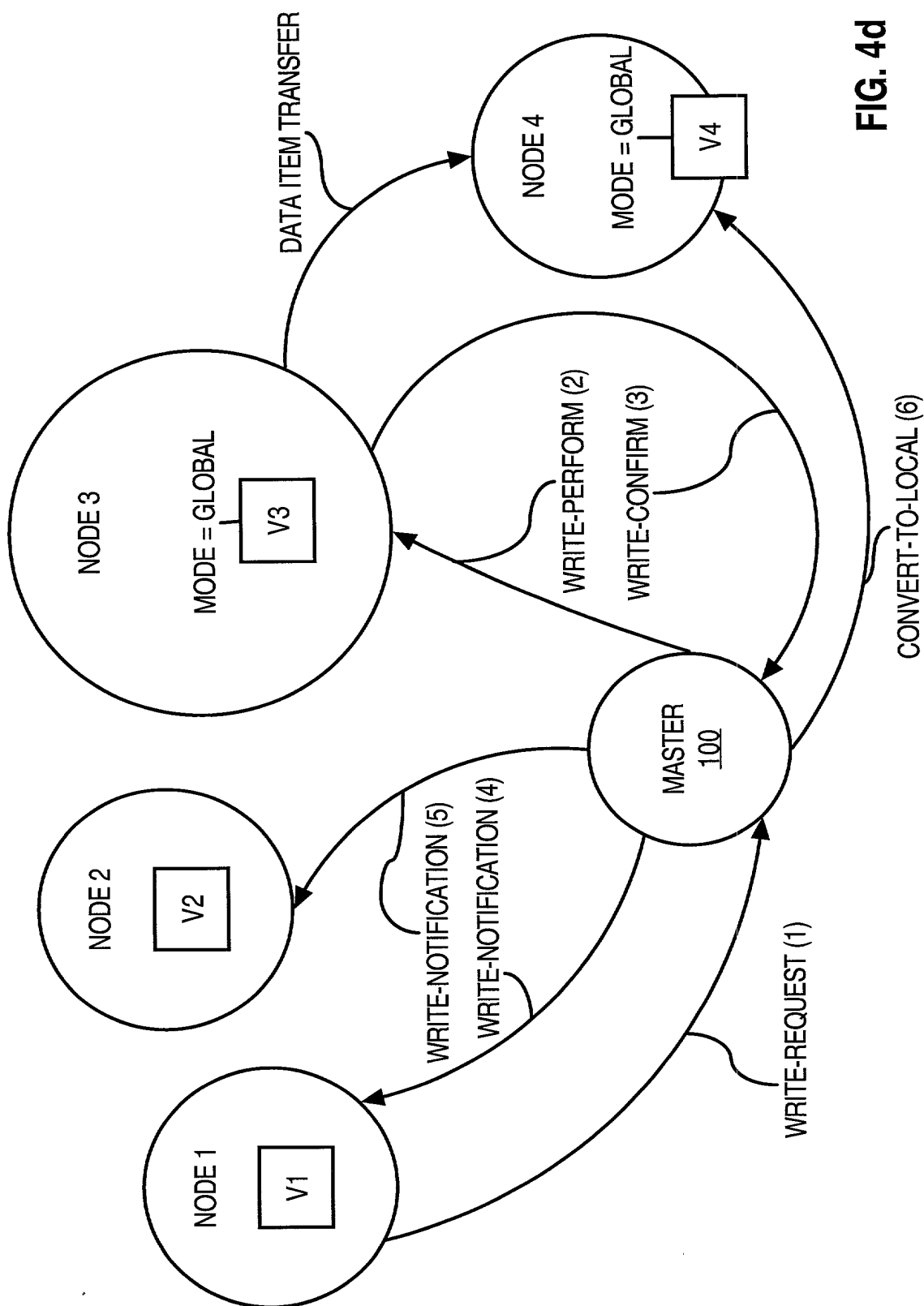


FIG. 4d

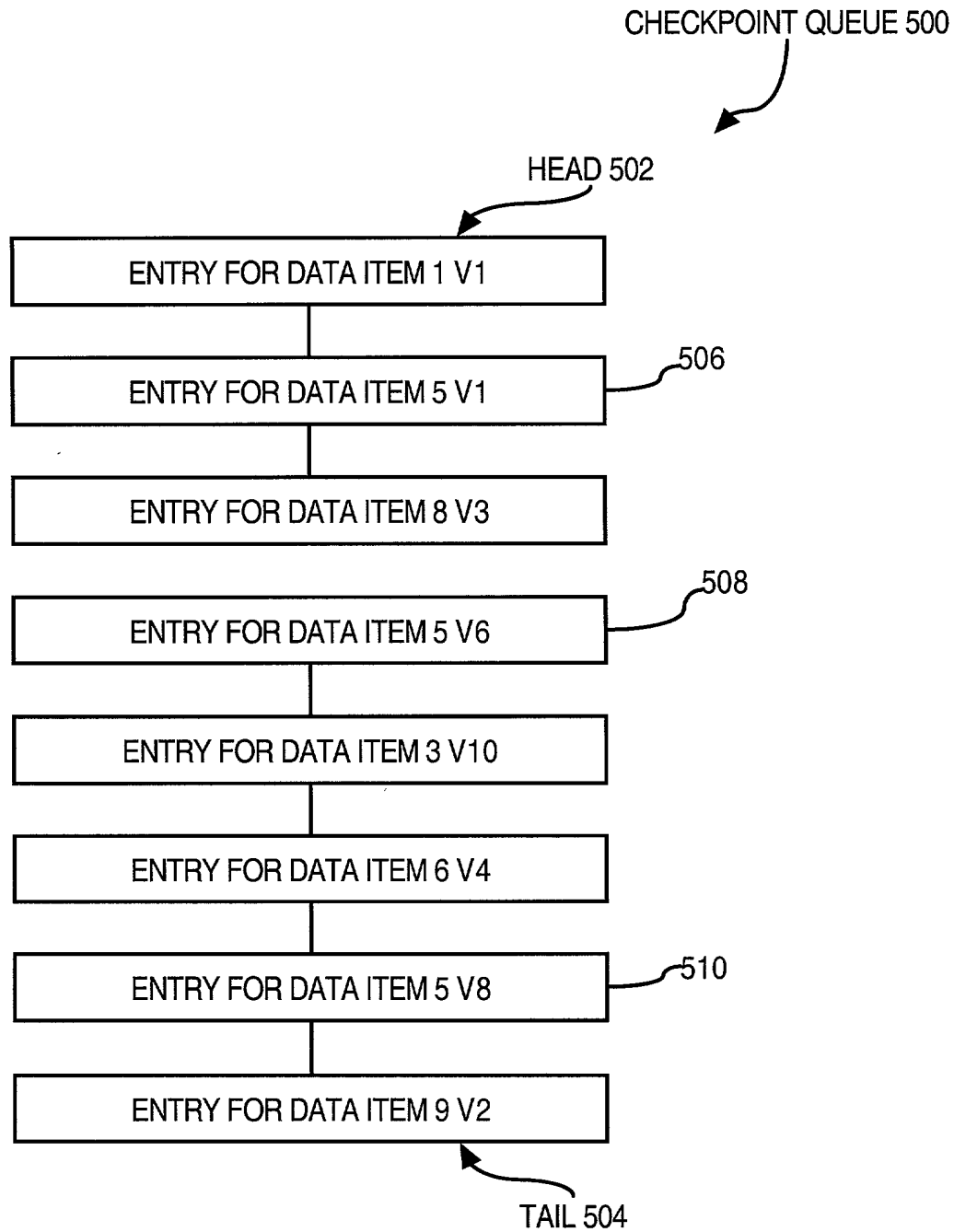


FIG. 5

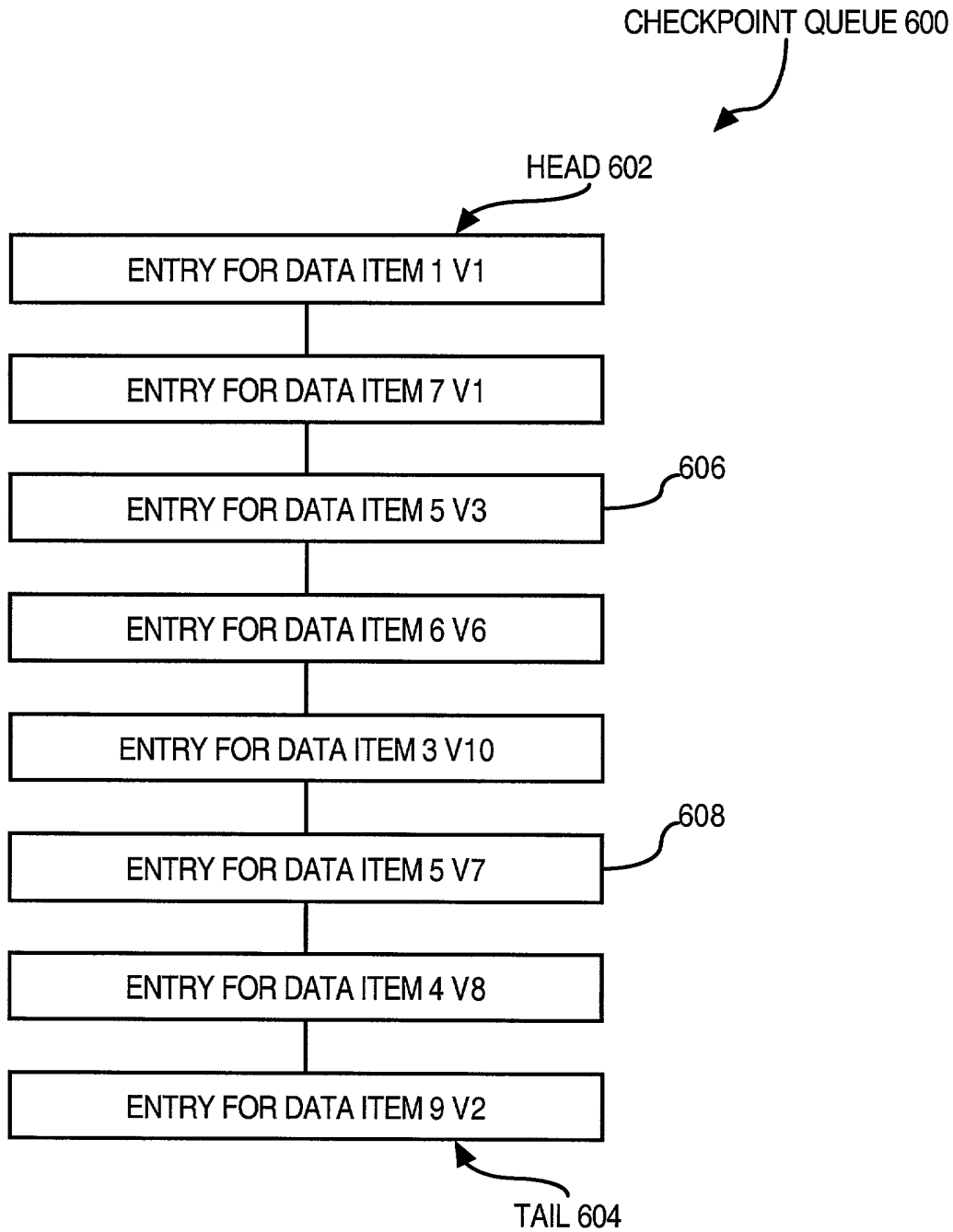


FIG. 6

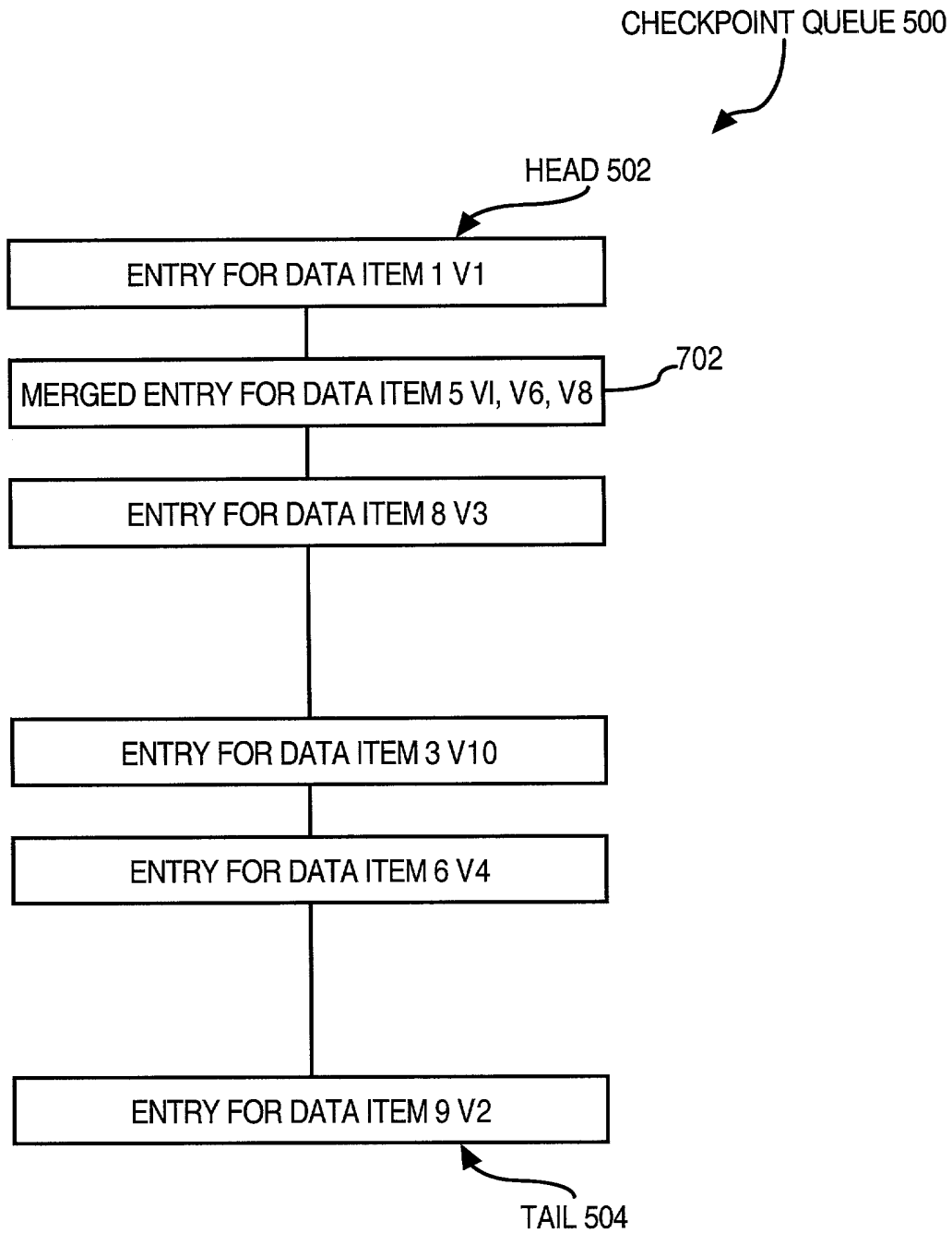


FIG. 7

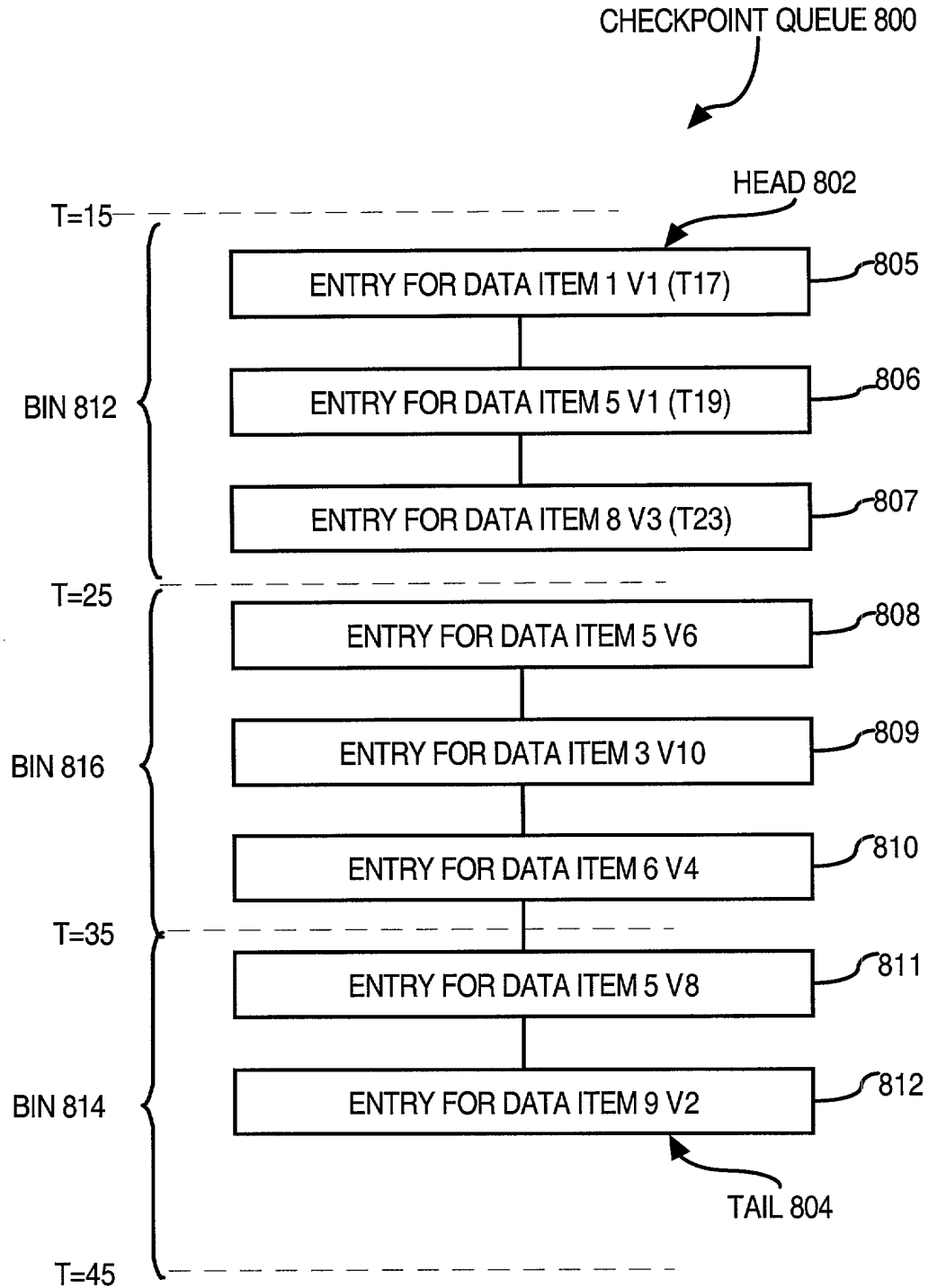


FIG. 8

FIG. 9

